



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

2123

#5

Applicants:

Hong Zhao, Guillermo Sentoni and John P. Guiver

Application No.:

10/045,668

Group Art Unit:

2123

Filed:

October 24, 2001

Examiner:

Not assigned

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JUN 07 2002

Title:

NON-LINEAR DYNAMIC PREDICTIVE DEVICE

Technology Center 2100

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202	
on <u>5/29/02</u>	<u>Margaret A. Norcott</u>
Date	Signature
<u>Margaret A. Norcott</u>	
Typed or printed name of person signing certificate	

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
P.O. Box 2327
Arlington, VA 22202

Sir:

This Information Disclosure Statement is submitted:

- ☐ under 37 CFR 1.129(a), or
(First/Second submission after Final Rejection)
- ☒ under 37 CFR 1.97(b), or
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).
- ☐ under 37 CFR 1.97(c) together with either:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, or
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, and
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)
- ☐ under 37 CFR 1.97(i):
Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.
(Filed after payment of issue fee)

M

Statement Under 37 CFR 1.97(e)

- ☐ Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- ☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.
- ☒ Enclosed herewith is form PTO-1449:
 - ☐ Copies of the cited references are enclosed.
 - ☒ Copies of cited references are enclosed except those entered in prior application, U.S. Application No. 09/160,128, to which priority under 35 U.S.C. 120 is claimed. The earlier application contains copies of the cited references.
 - ☐ The listed references were cited in the enclosed International Search Report in a counterpart foreign application.
 - ☐ The "concise explanation" requirement (non-English references) for reference(s) [] under 37 CFR 1.98(a)(3) is satisfied by:
 - ☐ the explanation provided on the attached sheet.
 - ☐ the explanation provided in the Specification.
 - ☐ submission of the enclosed International Search Report.
 - ☐ submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.
 - ☐ the enclosed English language abstract.

☐ Applicant requests that the following non-published pending applications be considered:

Examiner's
Initials

____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []
____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []
____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

Examiner

Date

- ☐ A copy of each above-cited application, including the current claims, is enclosed.
- ☐ A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

- ☐ A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.
- ☐ Please charge Deposit Account 08-0380 in the amount of \$[]. A copy of this Statement is enclosed.
- ☒ Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

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Dated: 5/23/02

PTO-1449 REPRODUCED

ATTORNEY DOCKET NO.
1086.1007-005

APPLICATION NO.
10/045,668

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

APPLICANT
Hong Zhao et al.

FILING DATE
10/24/01

GROUP
2123

May 22, 2002

(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
	AA	5,535,135	07/09/96	Bush et al.	702	24	
	AB	5,659,667	08/19/97	Buescher et al.	395	23	
	AC						
	AD						
	AE						
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	AG						
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	AI						
	AJ						
	AK						

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FOREIGN PATENT DOCUMENTS

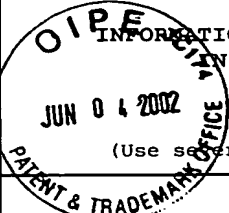
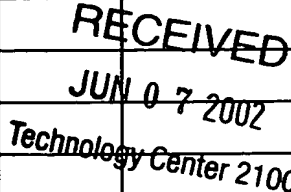
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
	AL	WO 97/28669	7 Aug 97	PCT			
	AM						
	AN						
	AO						
	AP						
	AQ						

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AR	Bishop, C.M., <i>Neural Networks for Pattern Recognition</i> , Oxford University Press (1995) p. 137-146.
	AS	Boyd, S. and L. Chua, "Fading Memory and the Problem of Approximating Nonlinear Operators with Volterra Series," <i>IEEE Trans. on Circuits and Systems</i> , 32:11, p. 1150-1161 (November 1985).
	AT	Graettinger, T.J., et al., "Model Predictive Control Using Neural Networks," <i>The AIChE 1994 Spring National Meeting</i> (1994).

EXAMINER

DATE CONSIDERED

PTO-1449 REPRODUCED		ATTORNEY DOCKET NO. 1086.1007-005		APPLICATION NO. 10/045,668			
 INFORMATION DISCLOSURE CITATION IN AN APPLICATION May 22, 2002 (Use several sheets if necessary)		APPLICANT Hong Zhao et al.					
		FILING DATE 10/24/01		GROUP 2123			
U.S. PATENT DOCUMENTS							
EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
<div style="text-align: right;">  </div>							
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AU	Qin, S.J. and Badgwell, T.J., "An Overview of Industrial Model Predictive Control Technology," <i>Preprints of CPC-V, Tahoe</i> , Jan. 7-12, 1996, p. 1-31.					
	AV	Sentoni, G., et al., "Approximate Models for Nonlinear Process Control," <i>AIChE Journal</i> : 42(8) p. 2240-2250 (1996).					
	AW	Su, H. et al., "Long-Term Predictions of Chemical Processes Using Recurrent Neural Networks: A Parallel Training Approach," <i>I&EC Research</i> 31(5), p. 1338-1352 (1992).					
	AX	Werbos, P., "Forms of Backpropagation for Sensitivity Analysis, Optimization, and Neural Networks," <i>The Roots of Back Propagation: From Ordered Derivatives to Neural Networks and Political Forecasting</i> , p. 256-262, John Wiley and Sons (1994).					
	AY	Zhao, H. et al., "NeuCOP II: A Nonlinear Multivariable Process Modeling, Control and Optimization Package," <i>AIChE 1997 Spring National Meeting</i> , Houston, Texas (1997).					
	AZ	Kolmogorov, A.N. and S.V. Fomin, <i>Introductory Real Analysis</i> , pp. 1-49, Dover Publications, Inc., New York (1980).					
	AR2	G. Sentoni et al., "On the Evaluation of a Certain Kind of Approximation Structure," <i>Latin American Applied Research</i> 25-S:35-40 (1995).					
EXAMINER				DATE CONSIDERED			

PTO-1449 REPRODUCED

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1086.1007-005APPLICATION NO.
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FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AS2	Katebi, M.R. and M.A. Johnson, "Predictive Control Design for Large Scale Systems," <i>Integrated Systems Engineering. A Postprint Volume from the IFAC Conference</i> , pp. 47-52, Sept. 27, 1994.
AT2	Gibbs, B.P. and D.S. Weber, "Nonlinear Model Predictive Control for Fossil Power Plants," <i>Proc. American Control Conference</i> , 4:3901-3098, June 24, 1992.
AU2	Korn, Granino A., "Neural Networks and Fuzzy-Logic Control on Personal Computers and Workstations," The MIT Press, 1995, pp. 252-253.

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DATE CONSIDERED